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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,767	08/31/2001	Ramesh Hariharan	RD-28131	2463

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH CENTER
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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

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DATE MAILED: 06/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/943,767

Applicant(s)

HARIHARAN ET AL.

Examiner

Martin J Angebrannt

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2001 and 14 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-115 is/are pending in the application.
- 4a) Of the above claim(s) 38-115 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-115 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1756

1. In view of the papers filed 1/14/2002, it has been found that this nonprovisional application, as filed, through error and without deceptive intent, improperly set forth the inventorship, and accordingly, this application has been corrected in compliance with 37 CFR 1.48(a). The inventorship of this application has been changed by the addition of Irene Dris and Azar Alizadeh.

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of the file jacket and PTO PALM data to reflect the inventorship as corrected.

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
- I. Claims 1-37, drawn to an optical recording medium having a polymeric substrate, classified in class 430, subclass 270.11.
 - II. Claims 38-78, drawn to a method of determining/calculating water strain of a multilayered article, classified in class 356, subclass 32.
 - III. Claims 79-115, drawn to a polymer useful in an optical storage medium, classified in class 528, subclass 196+.

The inventions are distinct, each from the other because:

3. Inventions group I and group II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the water strain can be merely measured and the deflection's

Art Unit: 1756

acceptability be determined using another basis, such as the ISO standard used to determine the acceptability of the medium.

4. Inventions group III and group I are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as a polymeric lens material or for other polymeric coatings and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

The examiner notes that sections [0040-0055] disclose a virtual laundry list of polymers. section [0056] specifically states that "It will be apparent to those skilled in the art from the foregoing that the polyphenylene ethers contemplates for use in the present invention include all those presently known, irrespective of variations in structural units or ancillary chemical features". This constitutes an admission that any known polyphenylene polymers meet the claim limitations. The polycarbonates of US patent 4,217,438 are disclosed as meeting the claims [0044].

5. Inventions group III and group II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the

Art Unit: 1756

process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the water strain can be merely measured and the deflection's acceptability be determined using another basis, such as the ISO standard used to determine the acceptability of the medium.

6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter and as shown by their different classification, restriction for examination purposes as indicated is proper.

7. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art, restriction for examination purposes as indicated is proper.

8. During a telephone conversation with Bernadette M. Bennett (44,522) on June 18, 2003 a provisional election was made with traverse to prosecute the invention of group I, claims 1-37. Affirmation of this election must be made by applicant in replying to this Office action. Claims 38-115 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for multilayer media with water absorption from one side only meeting the limitations of equation (I), does not reasonably provide enablement for embodiments where the water absorption occurs from both sides. The specification does not enable any person skilled in

Art Unit: 1756

the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims

See [0031] and [0033].

11. Claims 19-37 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for multilayer media with water absorption from both sides meeting the limitations of equation (II) and where the material for the thin film layer is a polymer having the same water absorption properties as the polymer of the substrate, does not reasonably provide enablement for embodiments where the water absorption occurs from only one side or where the thin film layer is a non-polymeric material or properties other than water absorption are relevant to formula (II). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims

See [0031], [0033] and [0035]. Thermal expansion and thermal conductivity are of interest [0034], but lack relevance to equation (II).

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by "A Diffusion Barrier Film to Stabilize the Dimensional Properties of Single-sided Plastic Optical Disks", Research Disclosures 418105 (02/1999) pp. 277-278.

The coating of a polycarbonate substrate with an aluminum film on one side and a fluorocarbon barrier layer on the opposite side of the substrate. The shape of curves in the upper right hand side are similar to that of figure 2. The values at 120 hours are almost the same as the initial values. It is not clear if the 0.6 mm substrate of DVD standard or the 1.2 mm thick substrates of the CD standard were used, but clearly one of these would have been used.

In reviewing the specification and particularly sections [0031],[0033] and the examples in sections [0058-0060], it seems that the particular polymers used is not critical, but rather the structure is. Particularly, the disclosure in table 1 which seems to indicate that the polymer is non-critical.

15. Claims 19-31 and 34-37 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Slaten '179.

The video disk members 53 and 53' or 55 and 55' offset or neutralize the curling or warping of each other due to moisture absorption (8/39-48 and figure 7). Useful substrate materials include PMMA, PVC, ABS polymers and polycarbonates (11/66-12/30) See also col. 2/lines 30-50. The substrate is disclosed as being more than 50% of the thickness of the medium. (8/32-38).

The examiner notes that the claims do not preclude face bonding two optical recording media through their protective layers because open "comprising" type language is used.

16. Claims 19-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slaten '179.

Art Unit: 1756

It would have been obvious to modify the invention of Slaten '179 to use any of the polymeric materials disclosed as useful to form substrates with a reasonable expectation of achieving comparable results based upon the disclosure at 8/39-48 and 8/32-38.

17. Claims 1-6,8 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evan et al. '211.

See the data in figure 1 and example 2. The disclosure of the coating of a data layer on the disk media is disclosed (1/48-63).

It would have been obvious to one skilled in the art to place a recording layer on the disk formed in example 2 with a reasonable expectation of achieving a useful optical recording medium which does not deform in humid conditions and being able to record data upon it.

18. Claims 19-37 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Nakaki '110.

Nakaki '110 describes a polycarbonate substrate with a thickness of 1.2 mm, coated with an optomagnetic recording layer sandwiched by two protective layers (SiNx) and a hygroscopic swelling layer (7) of the same polycarbonate material as the substrate and having a thickness of 0.2 mm. The disclosure that the hygroscopic swelling layer has the same water absorptivity and swelling rate as the substrate to prevent warping is disclosed. (2/5-15).

19. Claims 19-37 are rejected under 35 U.S.C. 102(a) as being fully anticipated by Anzai et al. JP 2001-067726 (translation attached).

Anzai et al. JP 2001-067726 describes the formation of an optical recording medium with a polycarbonate substrate and a second substrate laminated as the protective layer [0014-0015]

Art Unit: 1756

20. Claim 1-18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 04-321950.

JP 04-321950 describes an optical recording medium where the substrate is coated on one side with the recording layer and protection layers and only a protection layer on the other side. This prevents water intrusion from either side and the associated warping (see translation of abstract)

21. Claims 19-37 are rejected under 35 U.S.C. 102(a) as being fully anticipated by Itoigawa et al. '385.

Itoigawa et al. '385 discloses bonding two optical recording media together in a face to face orientation which reduces tilt as shown in figure 2.

22. Claims 19-37 are rejected under 35 U.S.C. 102(a) as being fully anticipated by JP 09-035330 (translation attached).

JP 09-035330 teaches an optical recording medium with a substrate coated with a porous Al layer and an acrylic protective layer which has the same water permeability as the substrate [0029 et seq.]

23. Claim 1-18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 04-108002.

JP 04-108002 describes an optical recording medium where the substrate is coated on one side with the recording layer and protection layers and only a protection layer on the other side. This prevents water intrusion from either side and the associated warping [fig 3 and 0028-0030]

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 1756

Otsuji et al. JP 2000-178431 describes spirobiindane polycarbonate substrates for recording media.

Davis '577 (abstract), Caruso et al. '537 (1/27-36), Caruso et al. '859 (1/27-37), Davis et al. '953 (1/12-36), Otsuji et al. '161 (1/12-13), Faler et al. '731 (abstract), Gallucci et al. '556 (1/5-7), JP 09-0-54982 (abstract), JP 2000-327765 (abstract) and Gordon et al. '987 (1/41-44) describe polycarbonate materials and their use in optical recording media. ***Some of these describe spirobiindane polycarbonates, which are described in the instant specification***

Takashi et al. JP 09-097451 describes a protective layer which swells to counteract the swelling of the substrate (see translation)

Yoshinaga et al. JP 10-350409, Hiroyuki JP 04-071260 and Yoshinori JP 04-311838 describe protective films applied to the rear surfaces of the optical recording media substrates (opposite side from the recording layers) to prevent tilting.

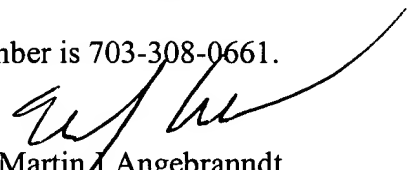
These references are cumulative to those above.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannndt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Art Unit: 1756

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Martin J. Angebrannt
Primary Examiner
Art Unit 1756

June 23, 2003